

FIG. 1

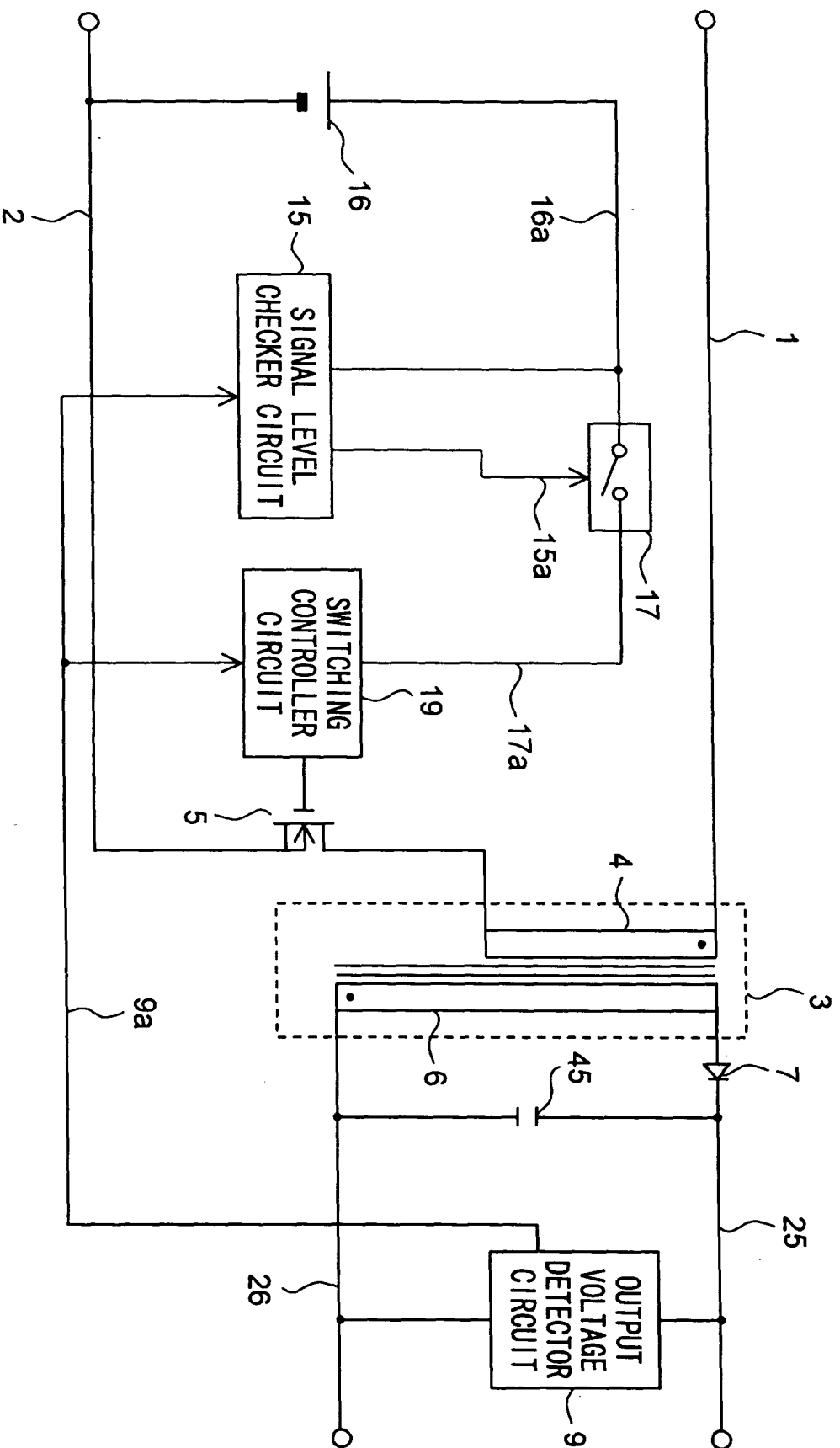
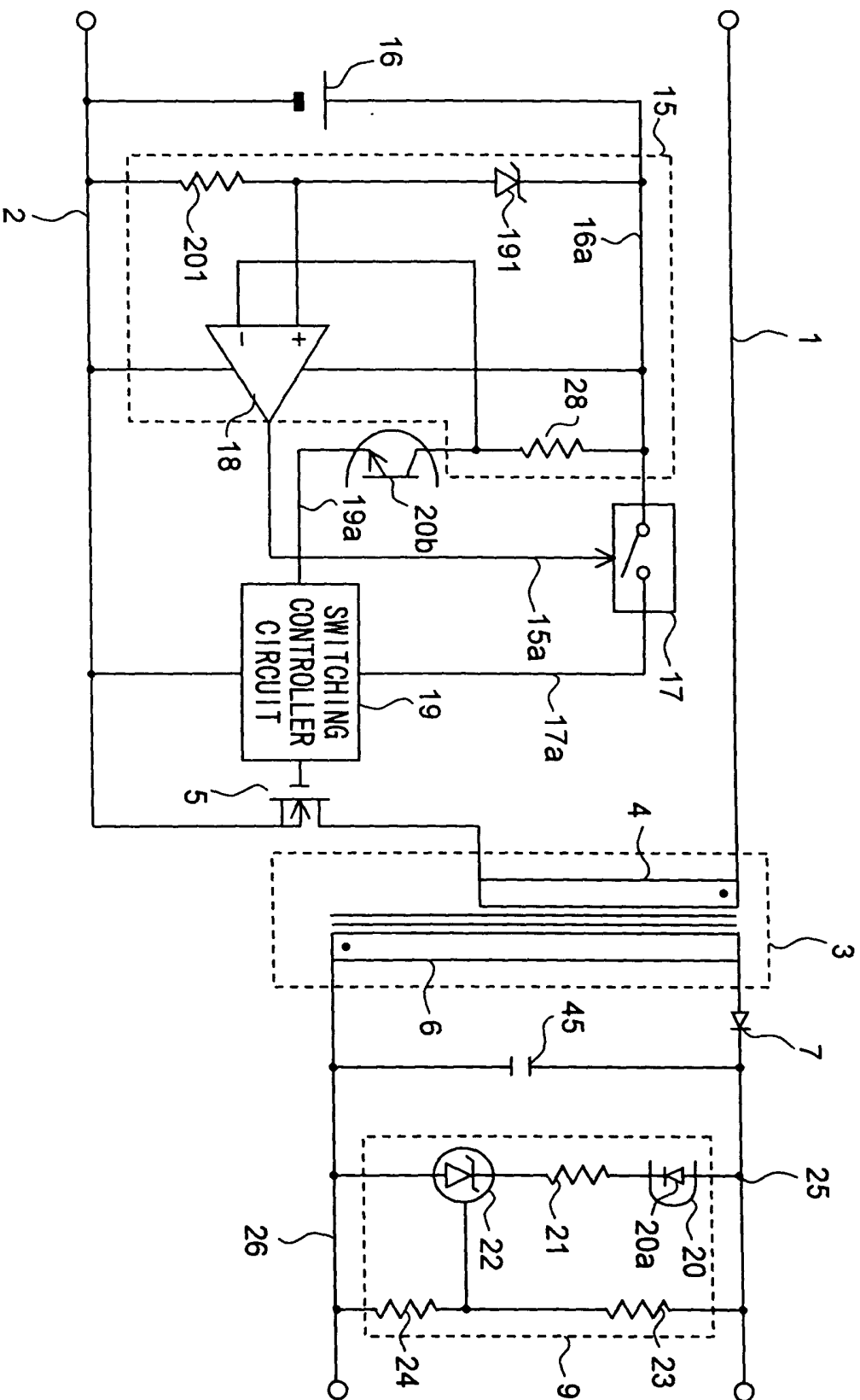


FIG. 2



The diagram illustrates a semiconductor device 1, which is divided into a first circuit 3 and a second circuit 9. The first circuit 3 includes a switching circuit 15, a switching controller 19, a switching element 17, a diode 16a, a resistor 28, a diode 191, and a capacitor 33. The second circuit 9 includes a diode 7, a resistor 21, a diode 20a, a resistor 23, a resistor 24, and a diode 22. The device 1 also includes a resistor 29, a resistor 29a, a resistor 62, a resistor 201, and a capacitor 46.

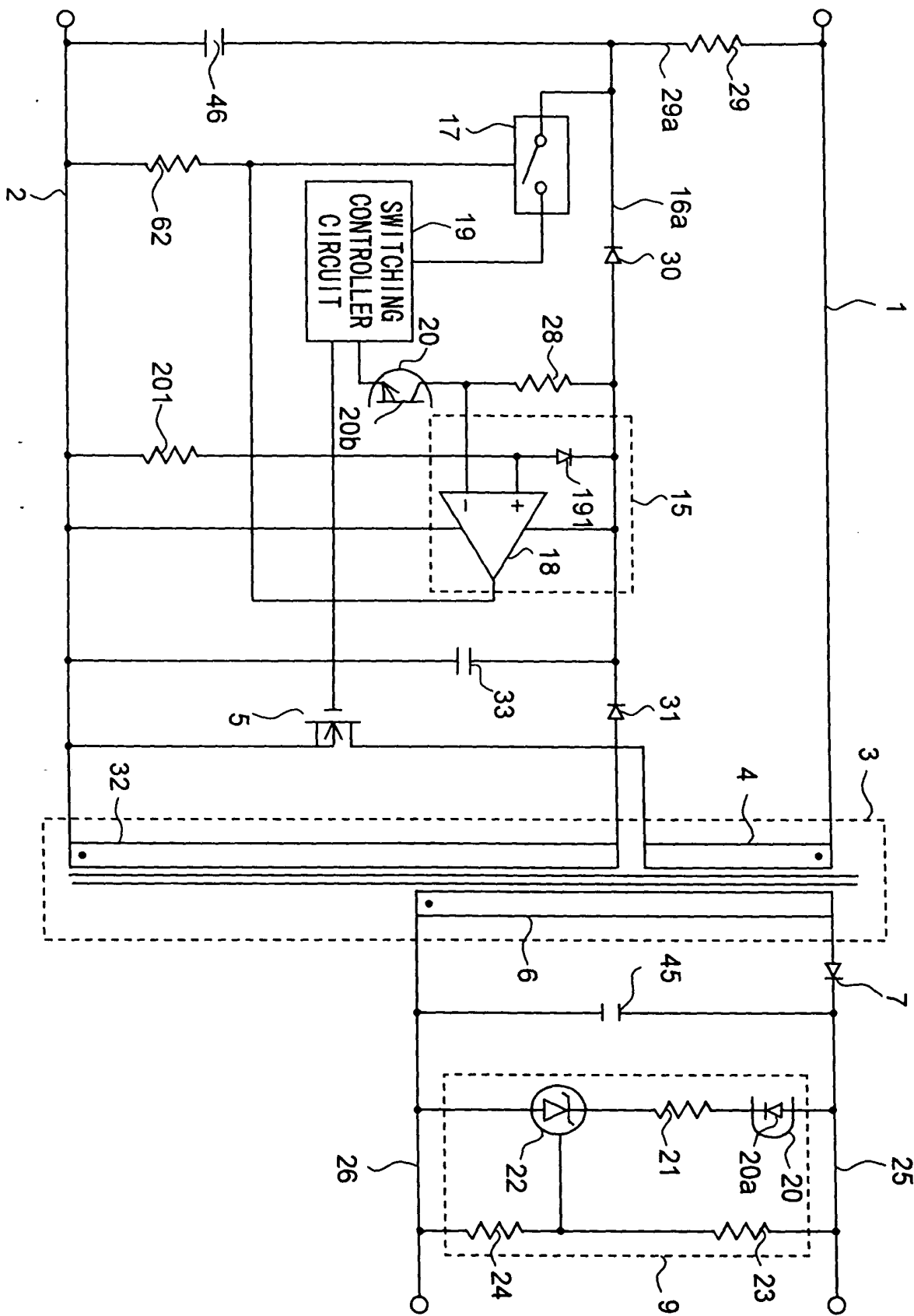


FIG. 4

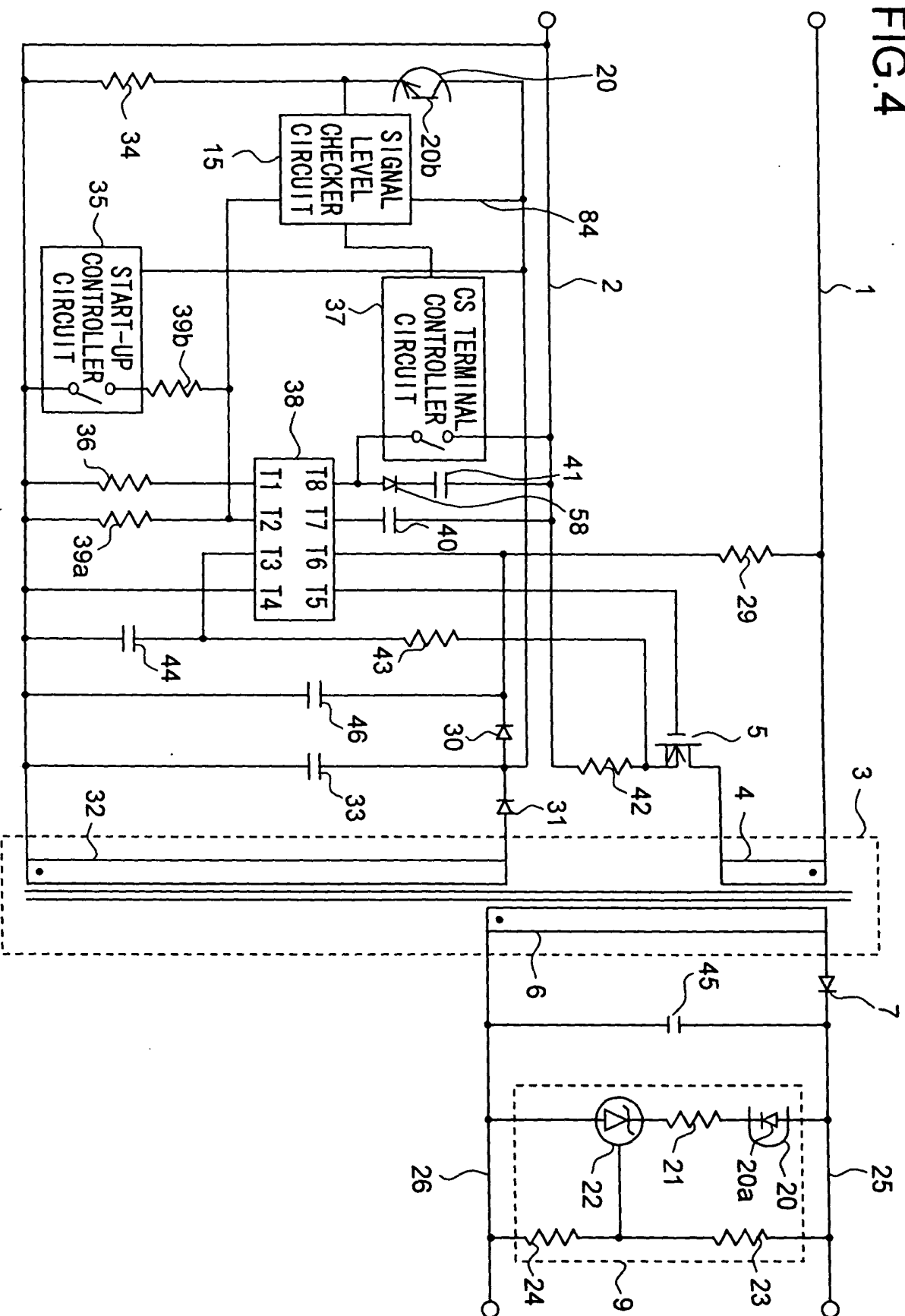


FIG.5

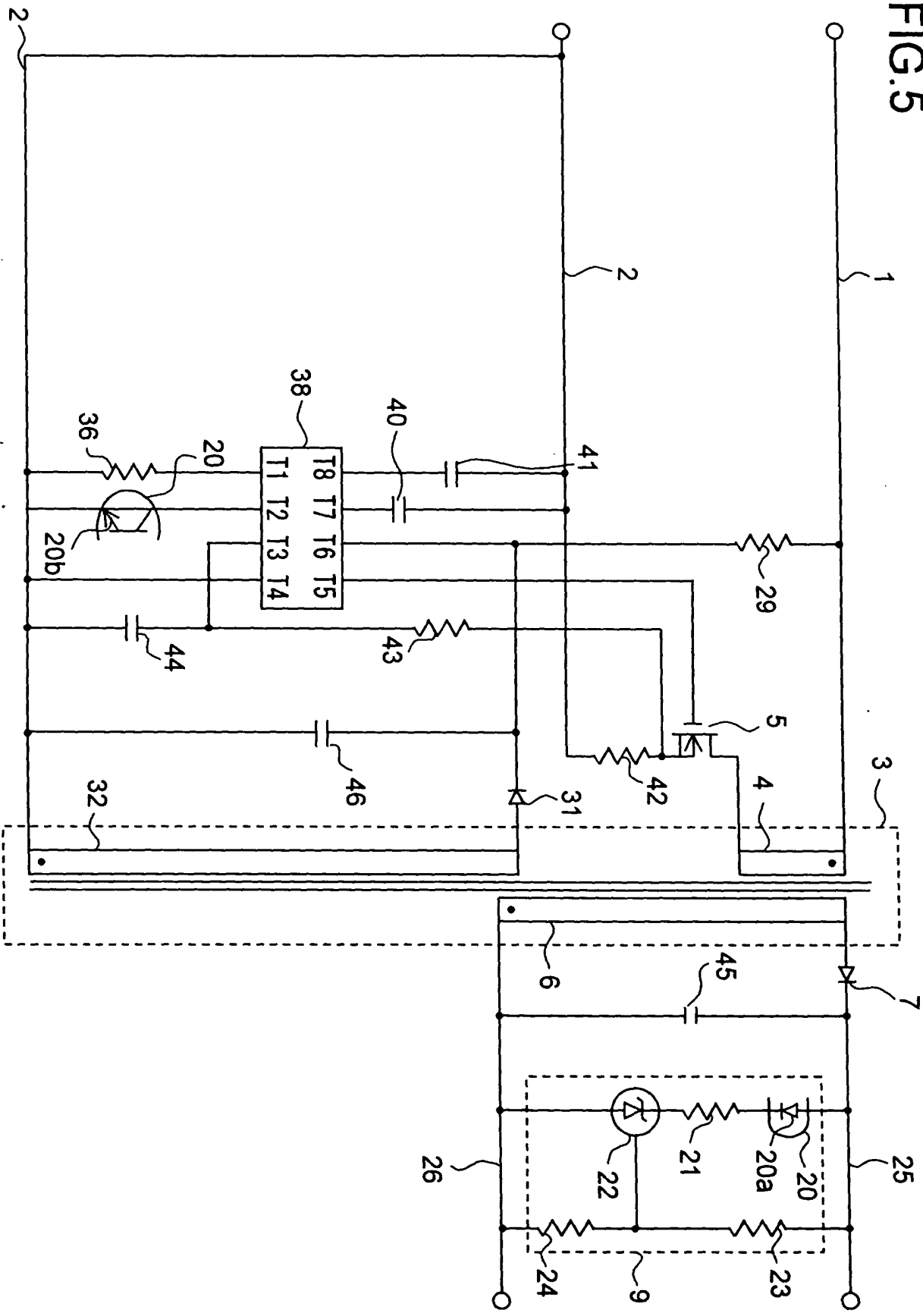


FIG.6

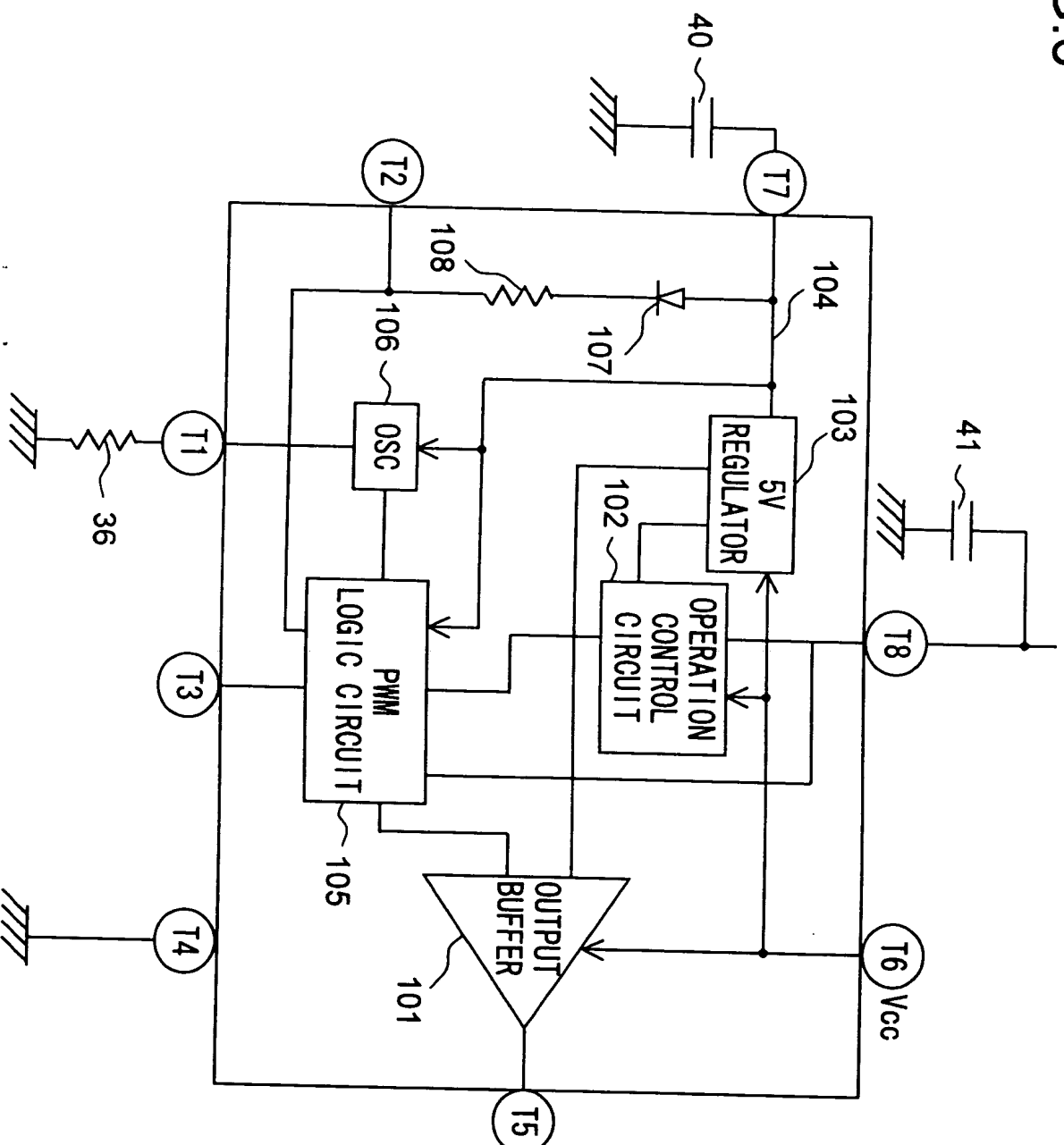


FIG. 7

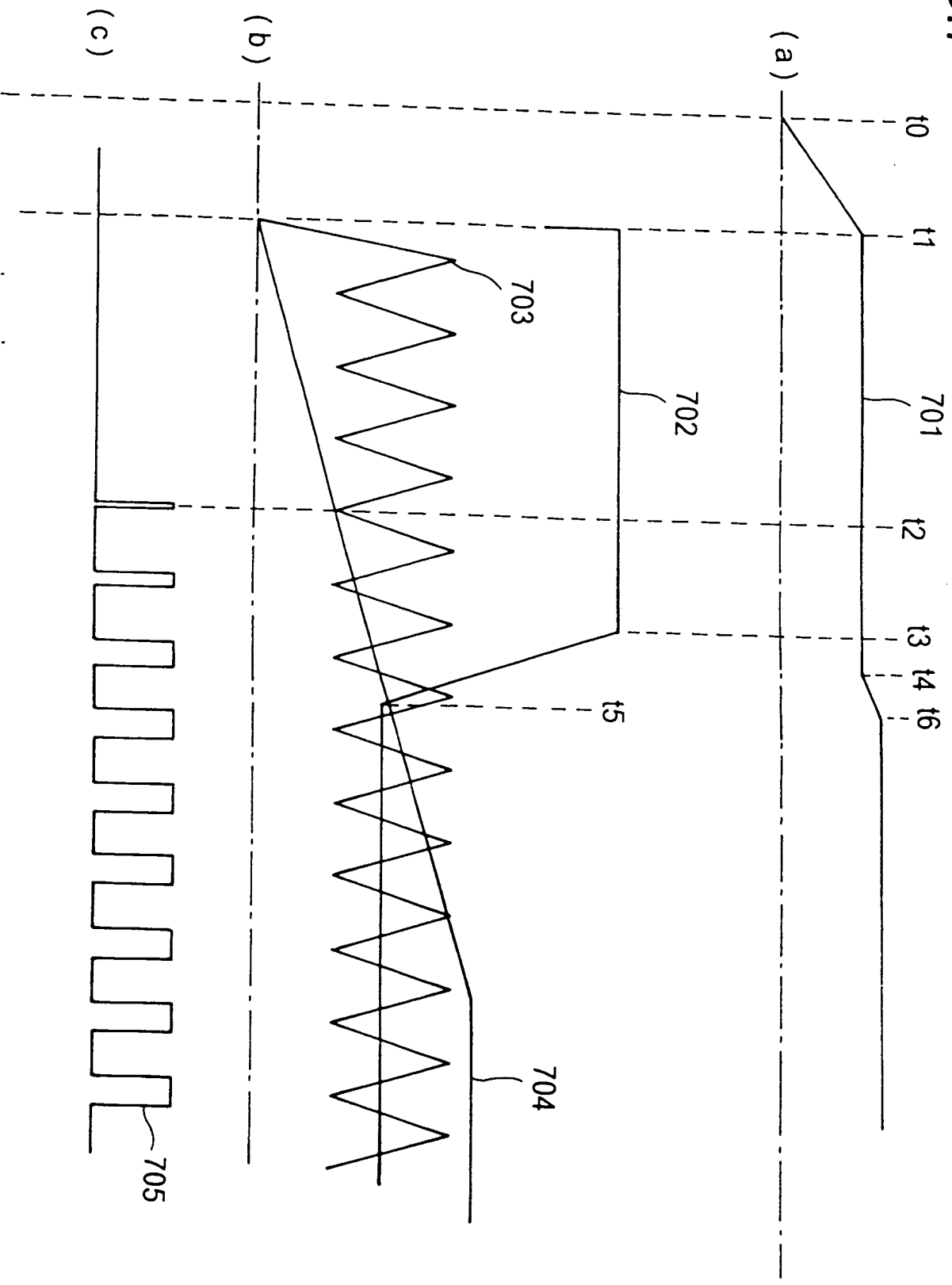


FIG. 8

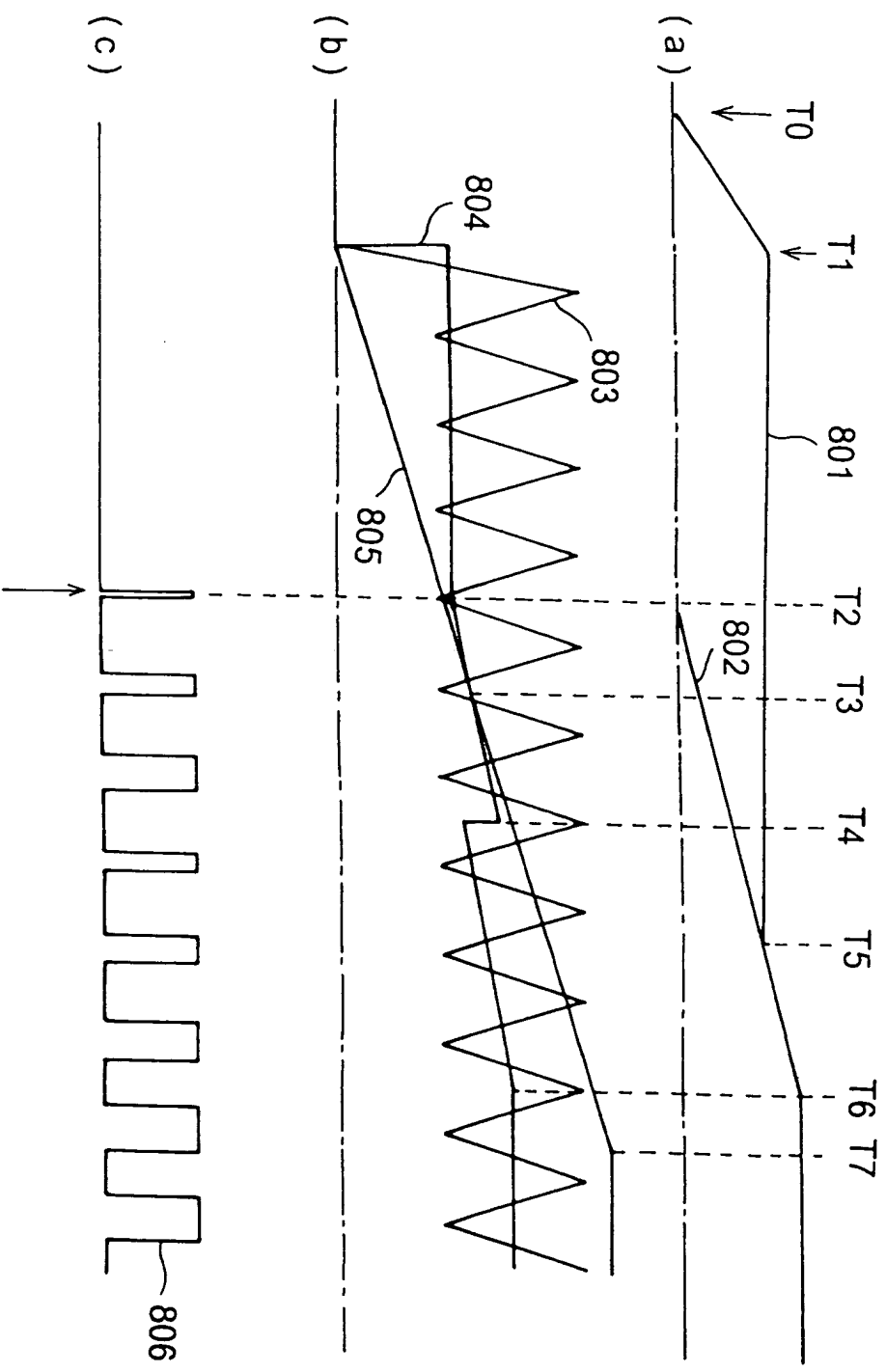


FIG. 9

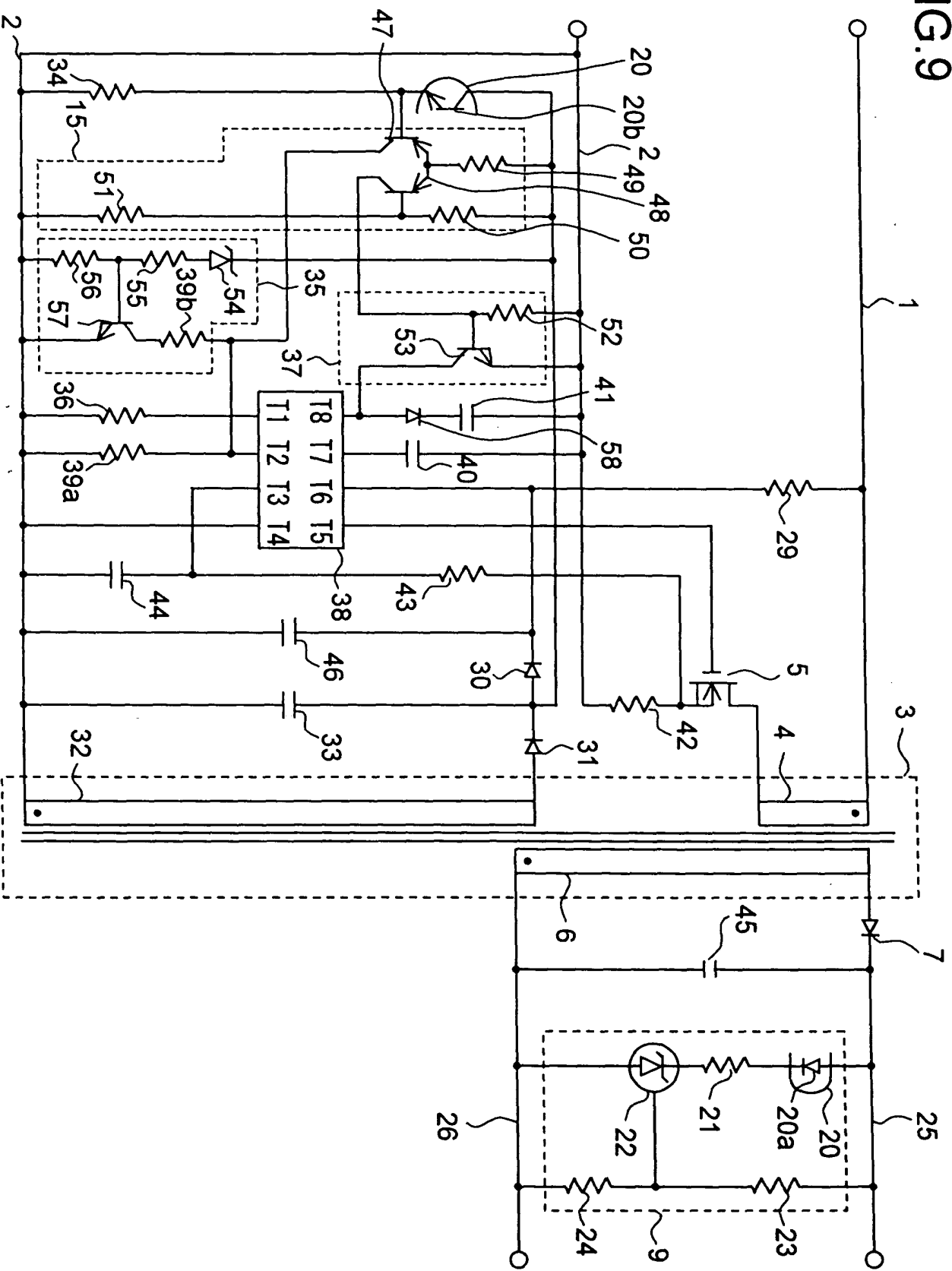


FIG. 10

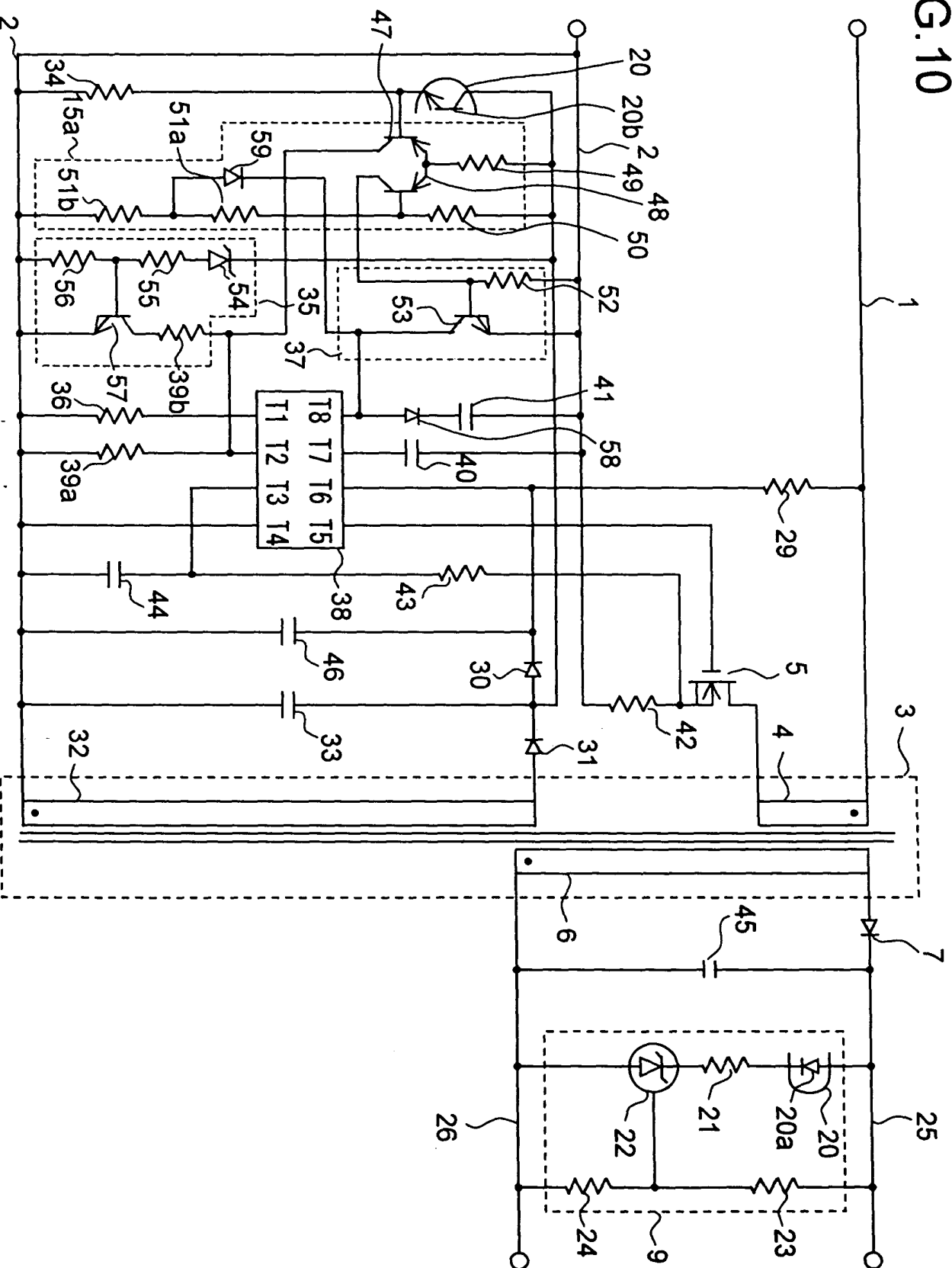


FIG. 11

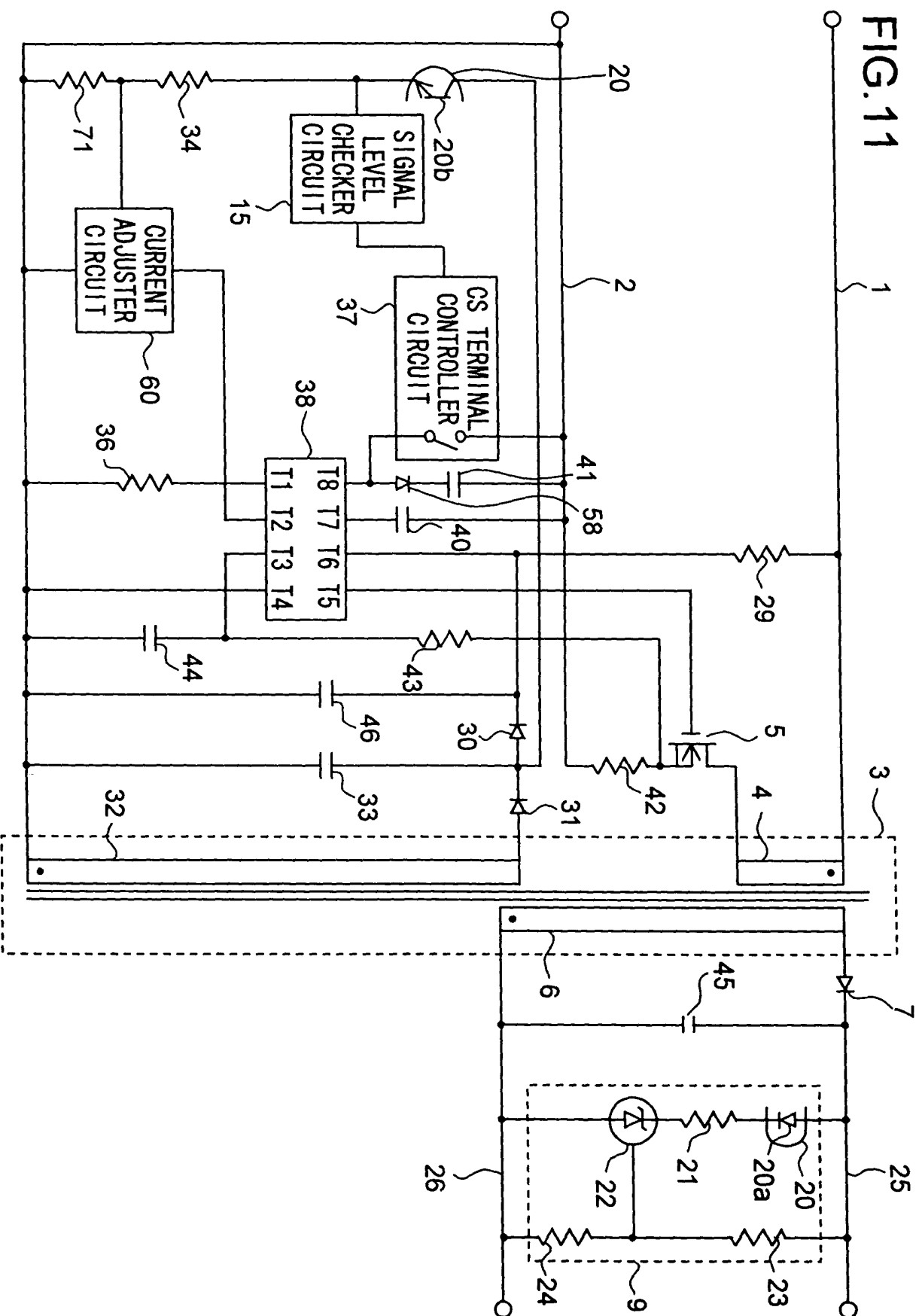


FIG.12

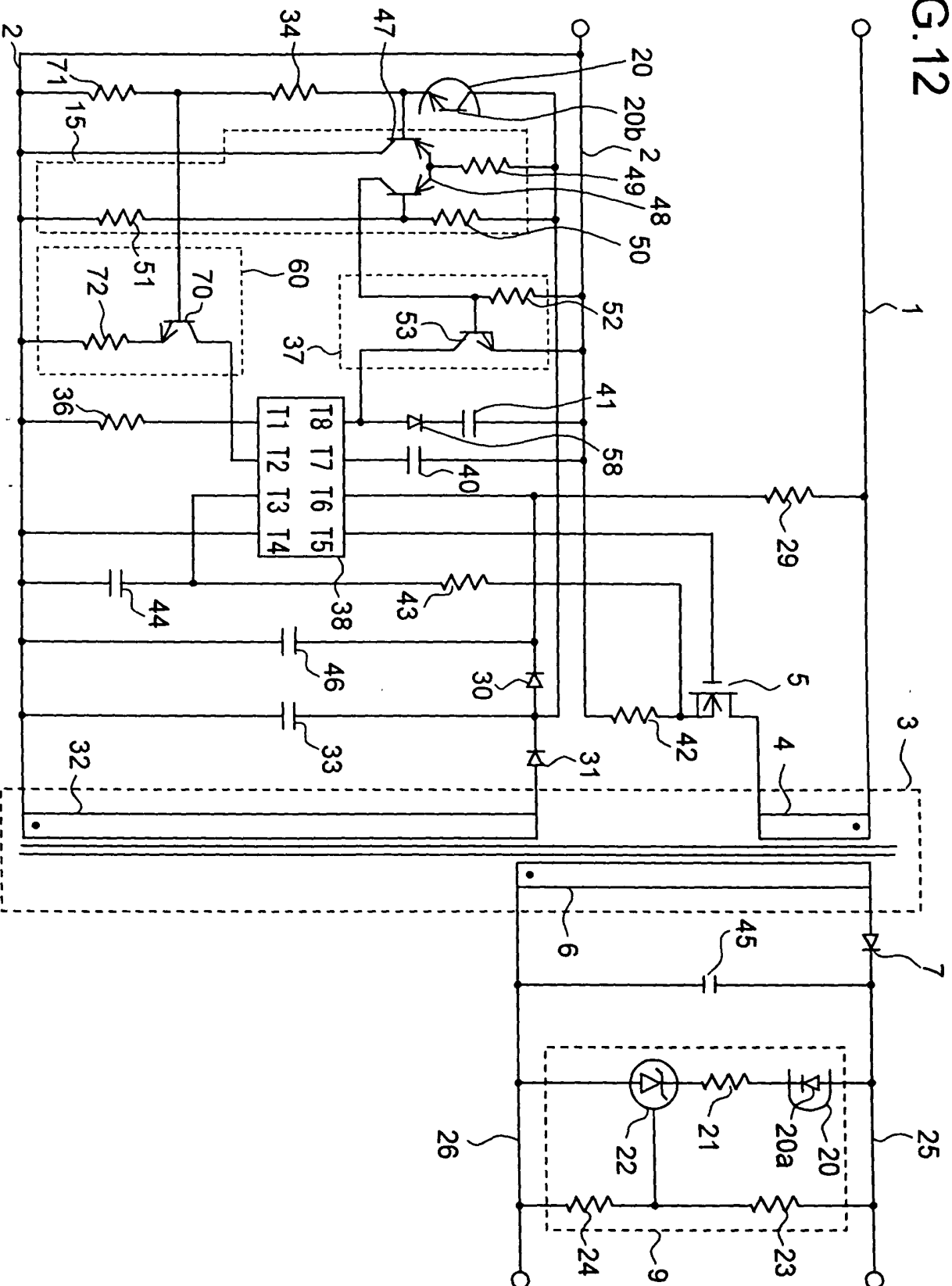


FIG. 13

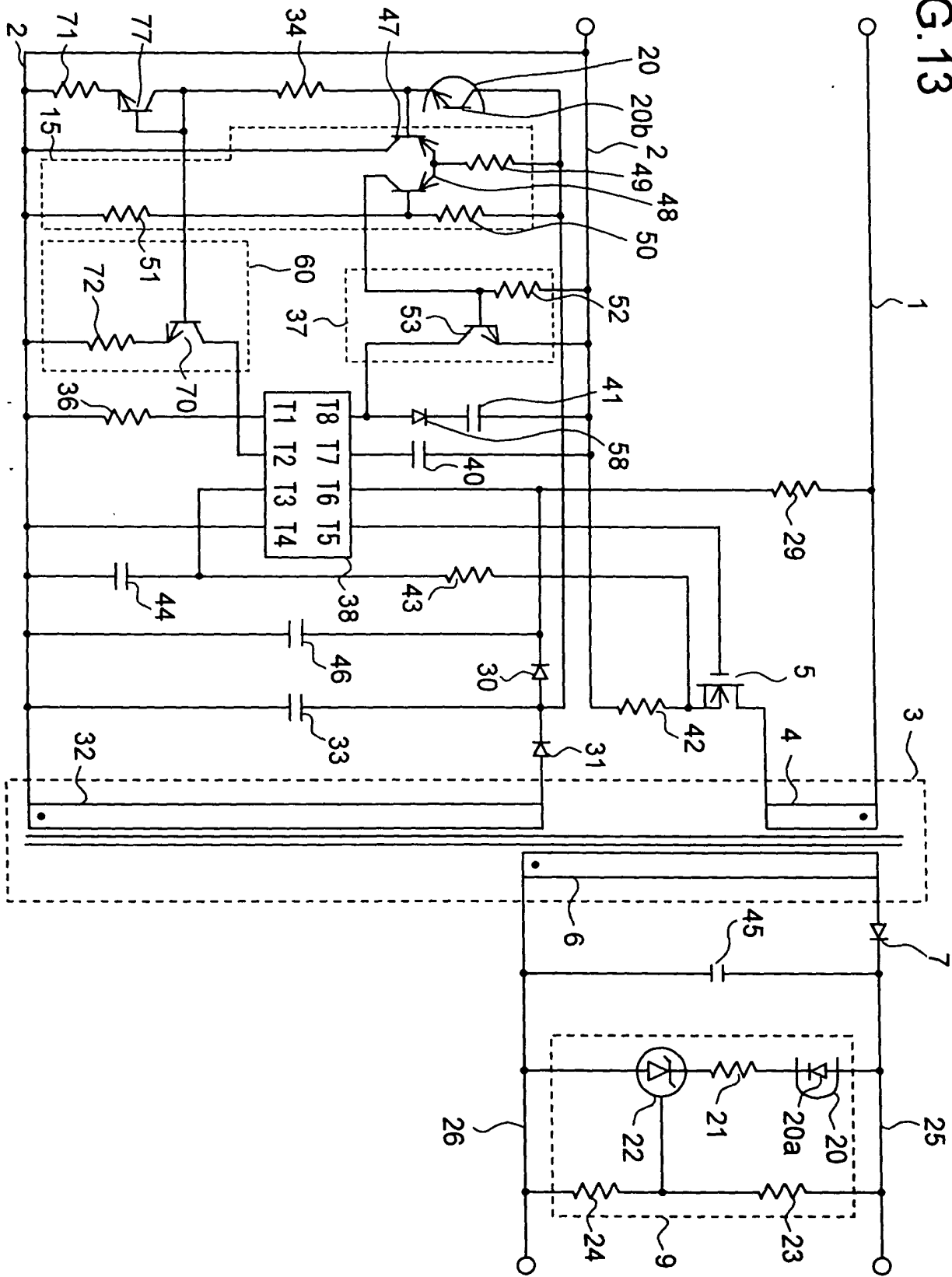


FIG. 14

The diagram illustrates a semiconductor device with multiple terminals and internal circuitry. On the left, a vertical stack of terminals is labeled 1, 2, 20, and 3. A dashed line labeled 32 indicates a boundary. The main circuit includes a CS TERMINAL CONTROLLER (37) and a SIGNAL LEVEL CHECKER CIRCUIT (15). The controller (37) is connected to a switch (41) and a capacitor (75). The checker (15) is connected to a current adjuster circuit (60) and a resistor (34). The current adjuster (60) is connected to a resistor (71) and a resistor (36). The signal level checker (15) is connected to a resistor (73) and a capacitor (74). The circuit also includes a transistor (5) with a gate connected to a resistor (29) and a drain connected to a resistor (42). A diode (30) is connected to the gate of the transistor (5). A resistor (43) is connected to the drain of the transistor (5). A capacitor (44) is connected to the gate of the transistor (5). A diode (31) is connected to the drain of the transistor (5). A resistor (45) is connected to the gate of the transistor (5). A diode (20a) is connected to the gate of the transistor (5). A resistor (21) is connected to the gate of the transistor (5). A diode (22) is connected to the gate of the transistor (5). A resistor (23) is connected to the gate of the transistor (5). A diode (24) is connected to the gate of the transistor (5). A resistor (25) is connected to the gate of the transistor (5). A diode (26) is connected to the gate of the transistor (5). A resistor (27) is connected to the gate of the transistor (5). A diode (28) is connected to the gate of the transistor (5). A resistor (29) is connected to the gate of the transistor (5). A diode (30) is connected to the gate of the transistor (5). A resistor (31) is connected to the gate of the transistor (5). A diode (32) is connected to the gate of the transistor (5). 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A resistor (81) is connected to the gate of the transistor (5). A diode (82) is connected to the gate of the transistor (5). A resistor (83) is connected to the gate of the transistor (5). A diode (84) is connected to the gate of the transistor (5). A resistor (85) is connected to the gate of the transistor (5). A diode (86) is connected to the gate of the transistor (5). A resistor (87) is connected to the gate of the transistor (5). A diode (88) is connected to the gate of the transistor (5). A resistor (89) is connected to the gate of the transistor (5). A diode (90) is connected to the gate of the transistor (5). A resistor (91) is connected to the gate of the transistor (5). A diode (92) is connected to the gate of the transistor (5). A resistor (93) is connected to the gate of the transistor (5). A diode (94) is connected to the gate of the transistor (5). A resistor (95) is connected to the gate of the transistor (5). A diode (96) is connected to the gate of the transistor (5). A resistor (97) is connected to the gate of the transistor (5). A diode (98) is connected to the gate of the transistor (5). A resistor (99) is connected to the gate of the transistor (5). A diode (100) is connected to the gate of the transistor (5).

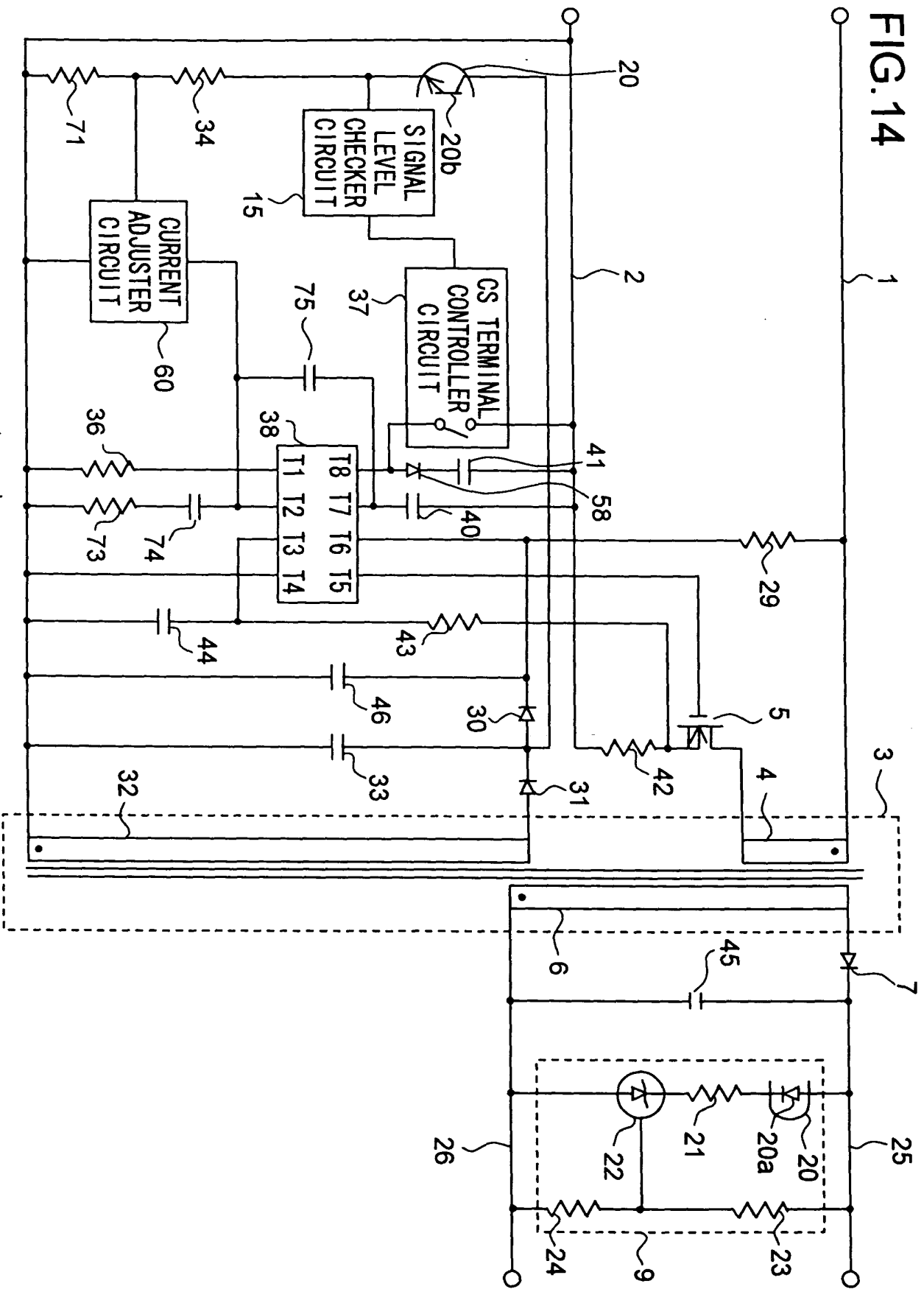


FIG. 15

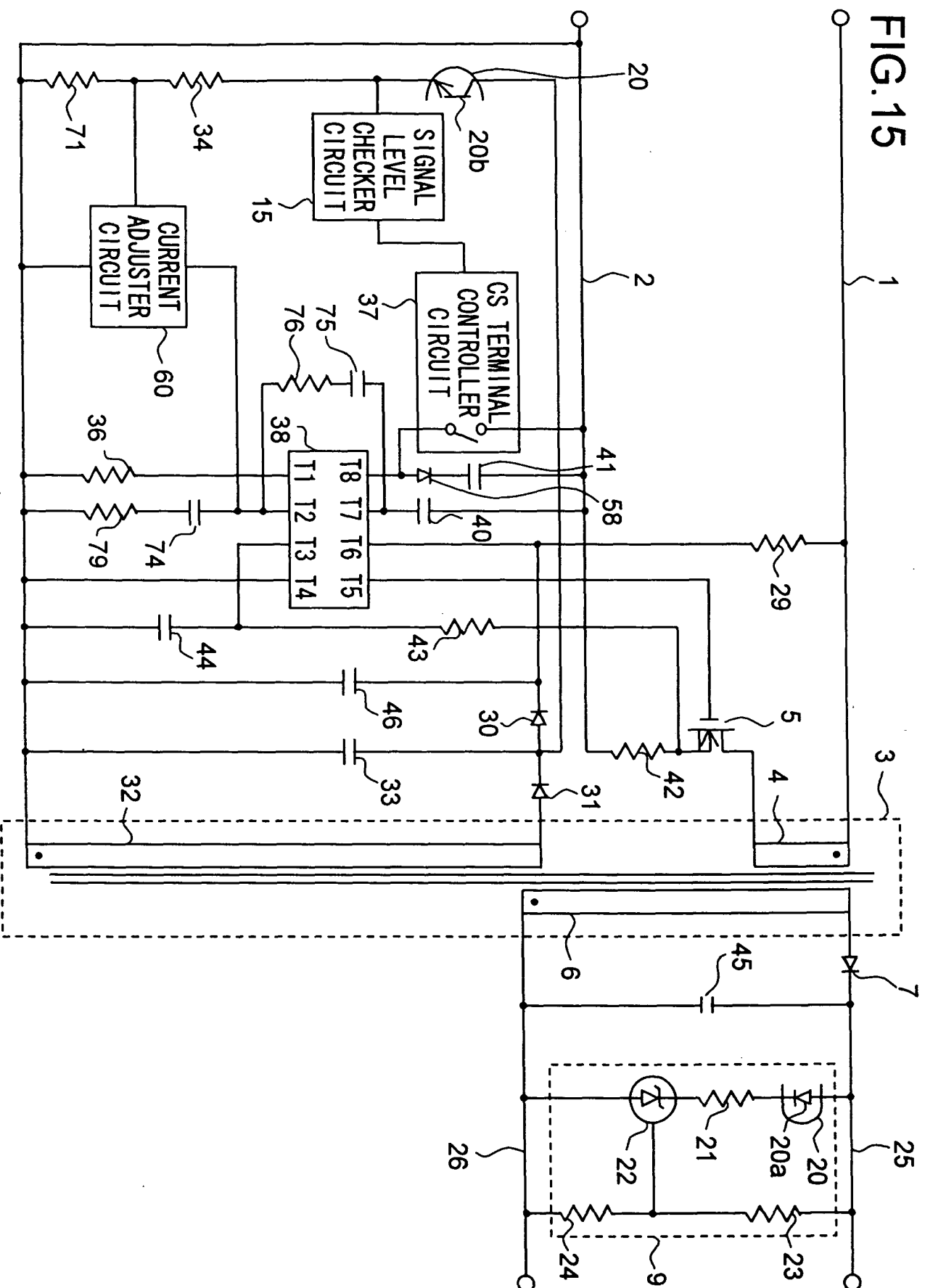


FIG. 16

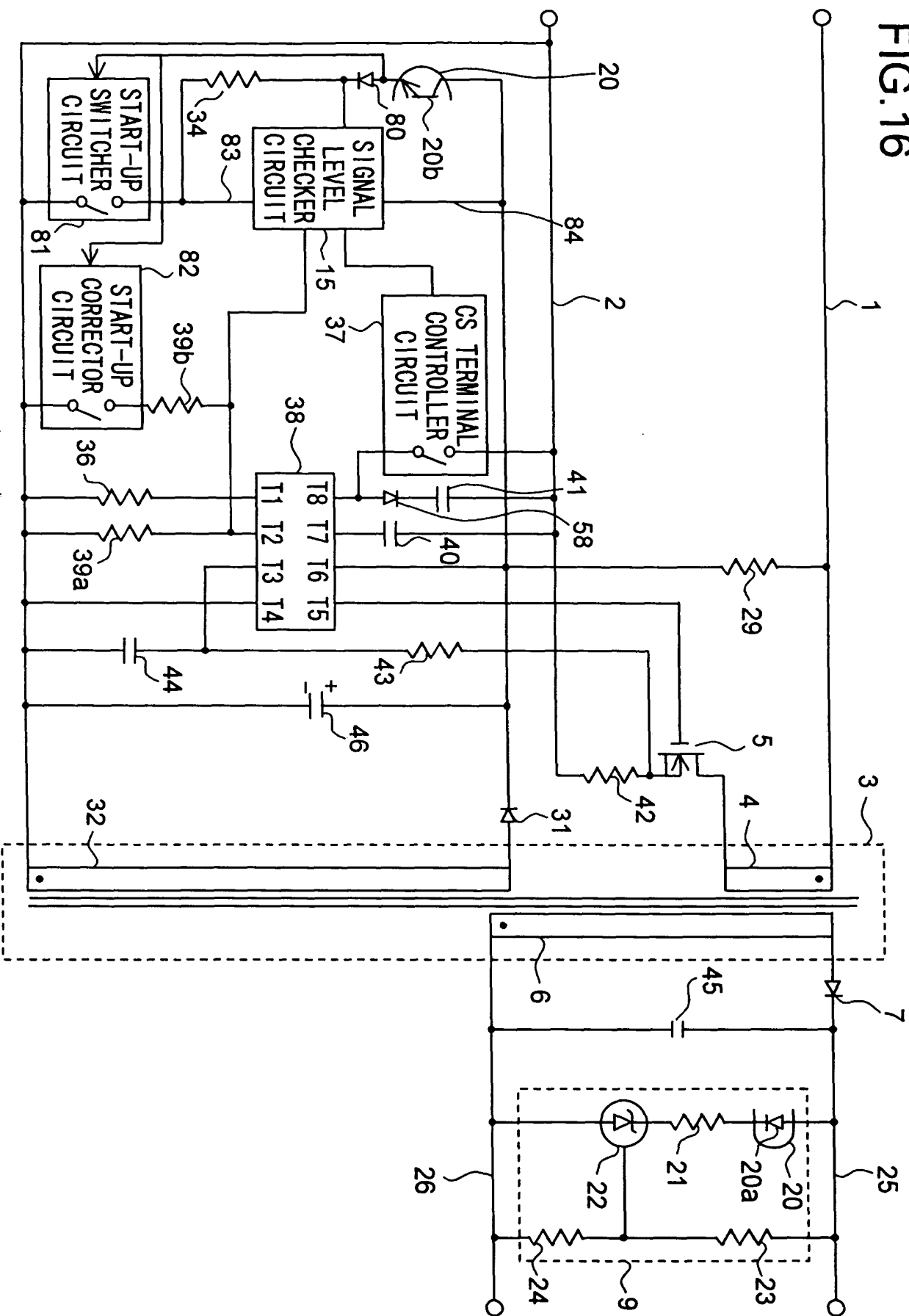


FIG.17

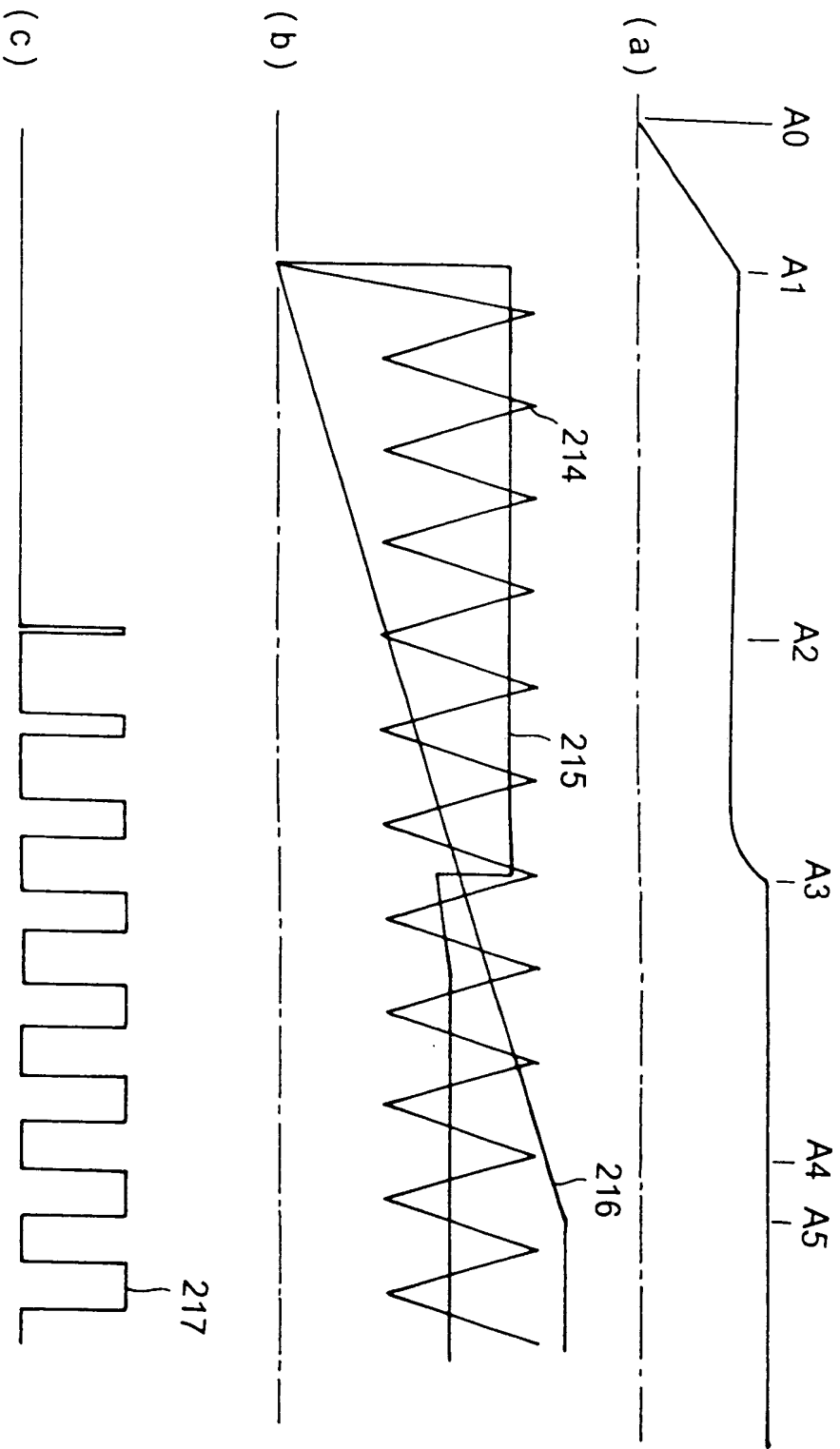


FIG. 18

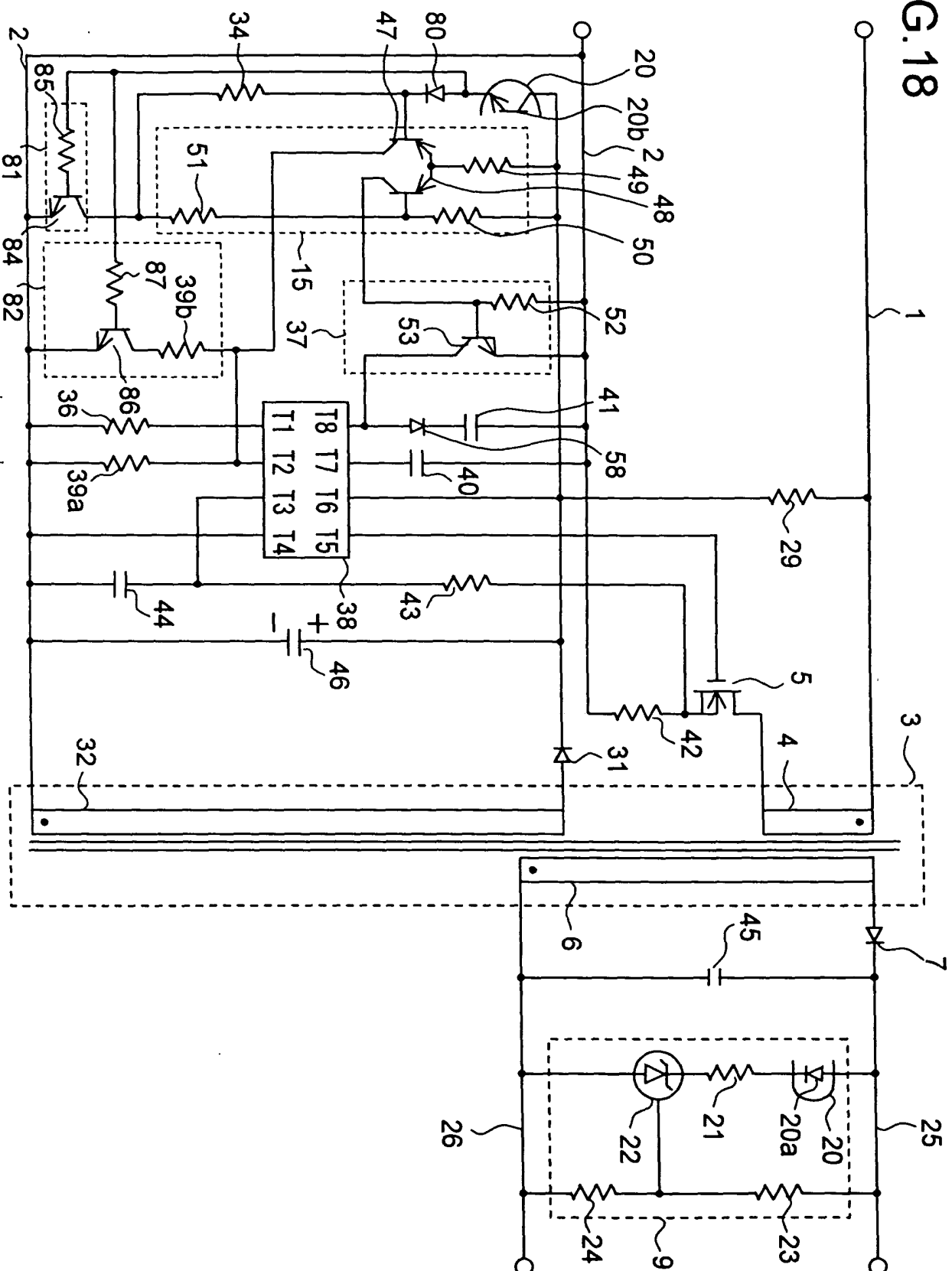


FIG. 19

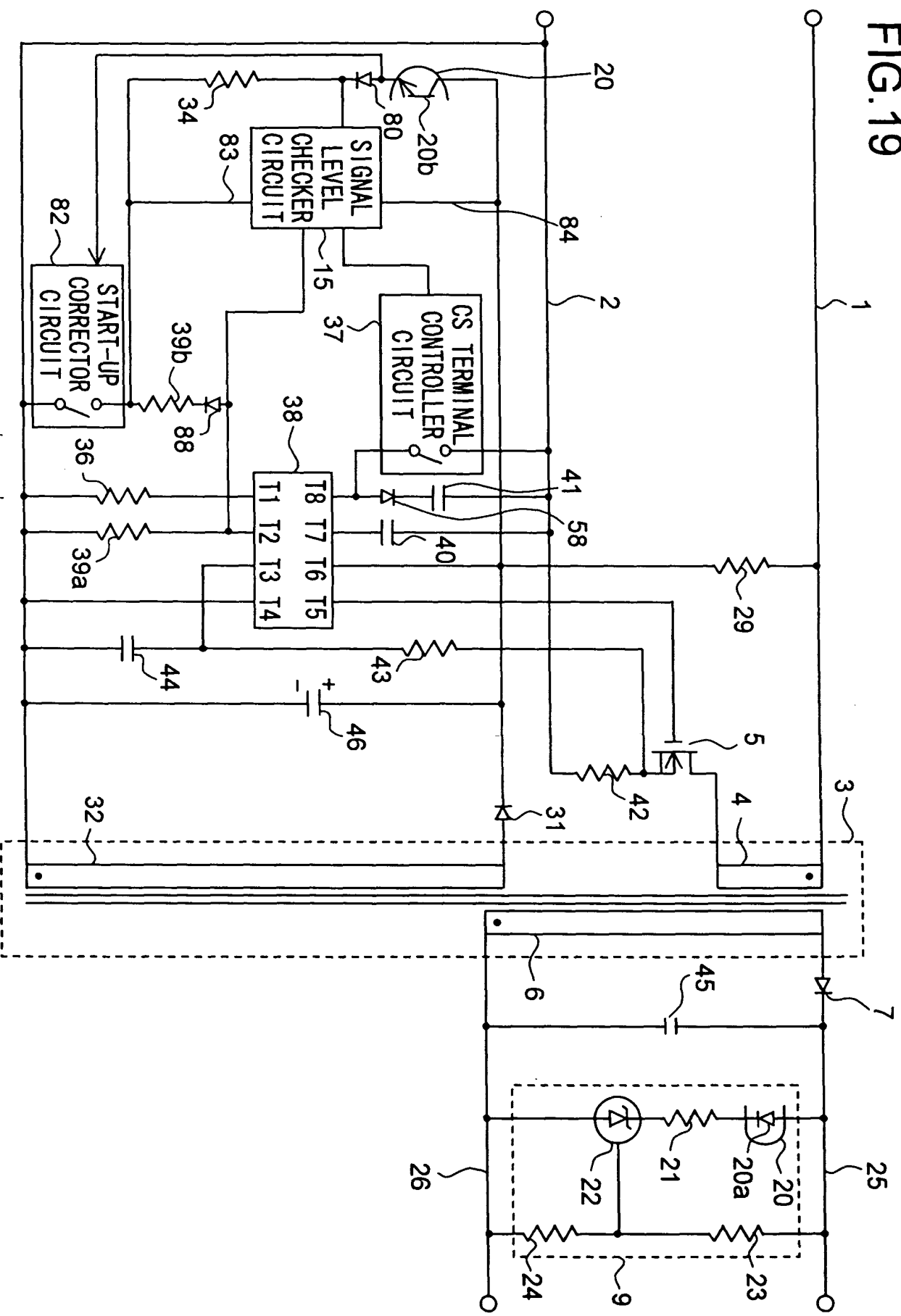


FIG. 20

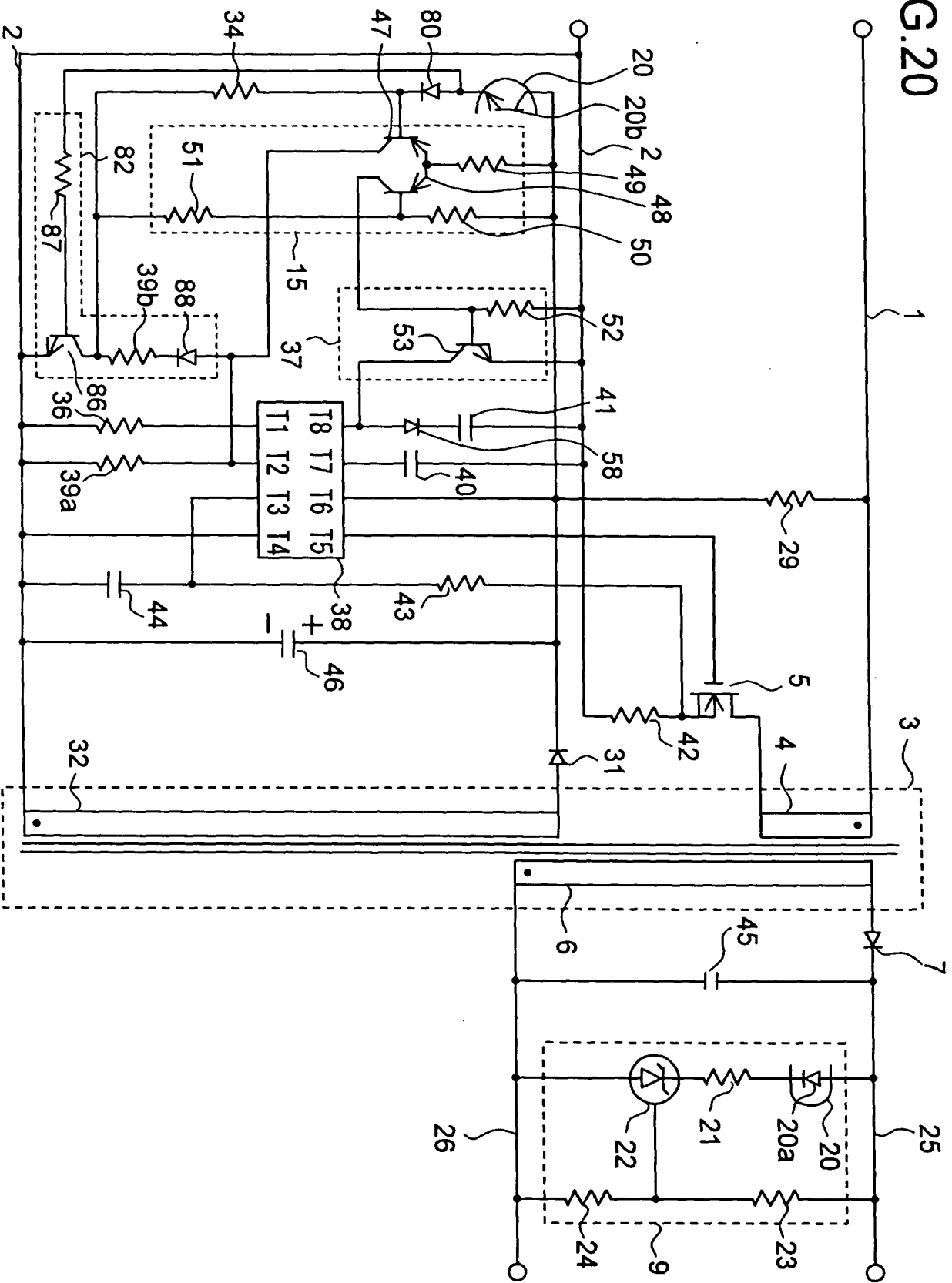


FIG. 21

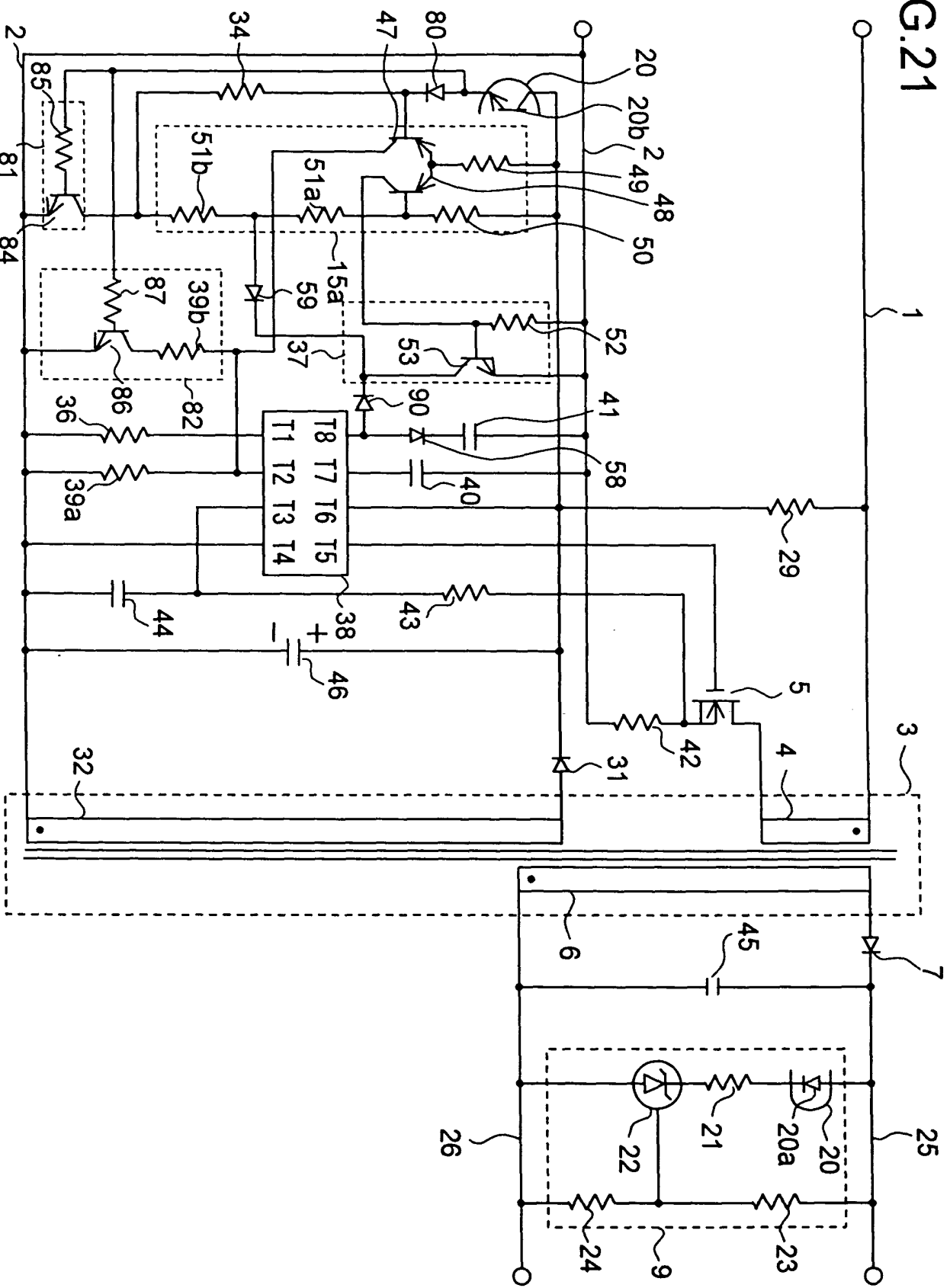


FIG. 22

